

## ABSTRACT

The invention relates to gene silencing as observed after integration of transgenes into plant genomes. Comparison of transcriptional gene expression between an Arabidopsis line carrying a silent transgene present in multiple copies and its mutant derivative *mom1* impaired in silencing of the transgene revealed two cDNA clones which are expressed in the mutant plants, but not in the parental and not in wild type plants. Both clones are derived from the same family of transcripts referred to as TSI (Transcriptionally Silent Information). Genomic templates encoding TSI are repetitive elements with mainly pericentromeric location and conserved organization among various ecotypes. Transcriptional silencing of the genomic TSI templates is specifically released in the mutant. Transcription of TSI can be used as a marker to identify a defective silencing pathway in a plant.